



Docket No.: KPC-294
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Shinji Tomita et al.

Application No.: 09/963,526

Confirmation No.: 9267

Filed: September 27, 2001

Art Unit: 1714

For: COATING COMPOSITION FOR
UNDERCOAT AND COATING METHOD FOR
REPAIR EMPLOYING THE SAME

Examiner: C. E. Shosho

DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I, Shinji Tomita, inventor of the above identified application, being duly warned,
hereby declare and say:

1. I am an inventor of the subject matter claimed in the above-captioned U.S.
Patent Application ("the Application").
2. I received a Bachelor of Engineering Degree in applied chemistry from Kinki
University in 1990.
3. I am Assistant Manager of Automotive Repair Coatings Division, Technical

Development Department of Kansai Paint Co., Ltd., and have been employed by Kansai Paint Co. Ltd. since 1990.

4. The invention claimed in the above-captioned application relates to a coating method comprising a step of providing undercoat with a coating composition. The coating composition comprises (A) an acrylic resin having a hydroxyl value of 30 to 85, a glass transition temperature (Tg) within the range of 40 to 90°C and a weight average molecular weight of 1000 to 30000; and (D) a polyisocyanate compound; wherein a ratio of isocyanate group in the (D) component to 1 equivalent of hydroxyl group in the (A) component is greater than 2.0 equivalents and less than or equal to 4.0 equivalents.

5. I have reviewed the Office Action(s) in the application, and the prior art cited therein. To respond to the outstanding Office Action, I conducted the following experimentation.

6. Preparation of Under-Coating Composition Samples (I) and (II):

Sample Composition (I):

As stated in the specification, page 15, lines 5-16, to the acrylic resin solution containing a solid matter of 55% (25 parts by weight) were added the above resin fine particles G (0.3 part by weight) which were prepared according the process disclosed in the specification, xylene (22 parts by weight), a pigment dispersant containing a tertiary amino group (2.6 parts by weight), titanium white (10 parts by weight), talc (15 parts by weight), barium sulfate (10 parts by weight), calcium carbonate (15 parts by weight), and dibutyltin dilaurate (0.1 part by weight), successively. The whole was mixed and stirred for 30 minutes

for dispersing them to obtain a main agent. To the main agent (100 parts by weight) was mixed "SUMIDUR N3390EA" (manufactured by Sumitomo-Bayer Urethane Co., Ltd., a polyisocyanate compound) (7.5 parts by weight) immediately before use to obtain a coating composition for undercoat as Sample Composition (I). Sample Composition (I) is 2.2 NCO/OH in equivalents ratio, which is within the claim scope of the Application.

Sample Composition (II):

Sample Composition (II) was prepared in the same manner of Sample (I) which is described above except for the amount of "SUMIDUR N3390EA" (manufactured by Sumitomo-Bayer Urethane Co., Ltd., a polyisocyanate compound), which is 6.8 parts by weight. Sample Composition (II) is 2.0 NCO/OH in equivalents ratio, which is disclosed in the Blum et al U.S. Patent No. 6,706,801 and is outside of the claim scope of the Application.

7. Preparation of Test Coated Plates (I) and (II):

To mild steel plates of 300 x 100 x 0.8 mm was applied "LUC POLYPUTTY" (manufactured by Kansai Paint Co. Ltd., an unsaturated polyester putty) so that the thickness becomes about 2 mm by means of a putty knife. The mild steel plates were sanded with a dry-sanding P120 paper to smooth the surface to be coated, after they were dried for 60 minutes at room temperature. Each of Sample Compositions (I) and (II) was sprayed thereon as a primer surfacer so that the solid matter at coating becomes 55% and the dry film thickness became about 80 μ m. After drying at 20°C for 60 minutes, the coated films were water-sanded with a P600 paper. Thereon was sprayed "PG2K METALLIC BASE" (manufactured by Kansai Paint Co. Ltd., a urethane curable base coat coating) so that the dry film thickness becomes about 15 μ m. After 10 minutes of setting at room temperature, the coated plate was dried at 60°C for 10 minutes. Then, "PG2K M CLEAR" (manufactured by

Kansai Paint Co. Ltd., a urethane curable clear coating) was sprayed thereon so that the dry film thickness becomes 40 to 50 μm and the coated plates were artificially dried at 60°C for 20 minutes to obtain Test Coated Plates (I) and (II).

8. Performance Test:

The resulting each test coated plate was subjected to the following coating performance tests. The results are shown in Tables 1.

TABLE 1

	Test Coated Plate (I)	Test Coated Plate (II)
Coating Performance ^(*1)	○	△
Substrate Shielding Ability ^(*2)	○	△

(*1) Coating Performance: Surface gloss of each test coated plate is observed. (○: good; △: gloss was slightly lowered; ×: gloss was considerably lowered and an absorption imprint was observed).

(*2) Substrate shielding ability: the disappearance of the scratch caused by abrasive paper at sanding the putty on the test coated plates (I) and (II) was evaluated by observing the state of the coated surface of topcoat (○: no influence of the paper scratch is observed; △: slight influence of the paper scratch is observed; ×: the paper scratch does not disappear and the finish property is deteriorated).

9. From the above experiments, it was determined that Test Coated Plate (I) having 2.2 NCO/OH equivalent ratio which is within the scope of the claimed invention of this application exhibited unexpected and superior results in both coating performance and substrate shielding ability, whereas Test Coated Plate (II) having 2.0 NCO/OH equivalent

ratio as disclosed by Blum et al (U.S. Patent No. 6,705,801).

16. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent resulting therefrom.

May 8, 2006
Date

Shinji Tomita
Shinji TOMITA